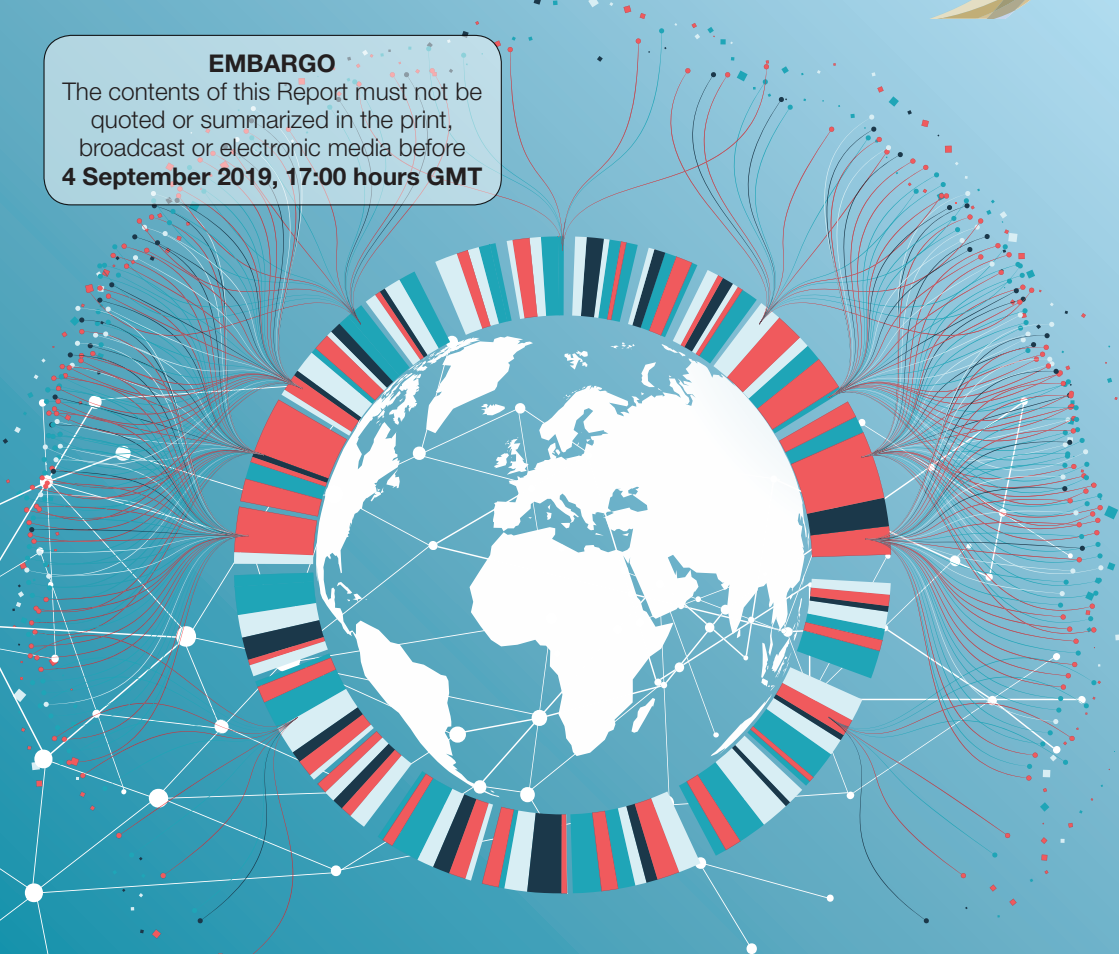




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# DIGITAL ECONOMY REPORT 2019

VALUE CREATION AND CAPTURE:  
IMPLICATIONS FOR DEVELOPING COUNTRIES

OVERVIEW





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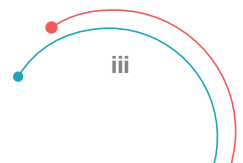


## Note

Within the UNCTAD Division on Technology and Logistics, the ICT Policy Section carries out policy-oriented analytical work on the development implications of information and communications technologies (ICTs) and e-commerce. It is responsible for the preparation of the *Digital Economy Report*, previously known as the Information Economy Report. The ICT Policy Section promotes international dialogue on issues related to ICTs for development, and contributes to building developing countries' capacities to measure e-commerce and the digital economy and to design and implement relevant policies and legal frameworks. The Section also manages the *eTrade for all* initiative.

In this Report, the terms country/economy refer, as appropriate, to territories or areas. The designations of country groups are intended solely for statistical or analytical convenience, and do not necessarily express a judgement about the stage of development reached by a particular country or area in the development process. Unless otherwise indicated, the major country groupings used in this Report follow the classification of the United Nations Statistical Office. These are:

*Developed countries:* the member countries of the Organisation for Economic Co-operation and Development (OECD) (other than Chile, Mexico, the Republic of Korea and Turkey), plus the European Union member countries that are not OECD members (Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania), plus Andorra, Liechtenstein, Monaco and San Marino. *Countries with economies in transition* refers to those in South-East Europe and the Commonwealth of Independent States. *Developing economies* in general are all the economies that are not specified above. For statistical purposes, the data for China do not include those for Hong Kong Special Administrative Region of China (Hong Kong, China), Macao Special Administrative Region of China (Macao, China) or Taiwan Province of China. An excel file with the main country groupings used can be downloaded from UNCTADstat at: <http://unctadstat.unctad.org/EN/Classifications.html>.



References to Latin America include the Caribbean countries unless otherwise indicated.

References to sub-Saharan Africa include South Africa unless otherwise indicated.

References to the United States are to the United States of America, and to the United Kingdom are to the United Kingdom of Great Britain and Northern Ireland.

The term “dollars” (\$) refers to United States dollars, unless otherwise indicated.

The term “billion” signifies 1,000 million.

The following symbols may have been used in the tables:

Two dots (..) indicate that data are not available or are not separately reported.

Rows in tables have been omitted in those cases where no data are available for any of the elements in the row.

A dash (-) indicates that the item is equal to zero or its value is negligible.

A blank in a table indicates that the item is not applicable, unless otherwise indicated.

A slash (/) between dates representing years, e.g. 1994/95, indicates a financial year.

Use of an en dash (-) between dates representing years, e.g. 1994–1995, signifies the full period involved, including the beginning and end years.

Annual rates of growth or change, unless otherwise stated, refer to annual compound rates.

Details and percentages in tables do not necessarily add up to the totals because of rounding.



# Preface

The digital revolution has transformed our lives and societies with unprecedented speed and scale, delivering immense opportunities as well as daunting challenges. New technologies can make significant contributions to realizing the Sustainable Development Goals, but we cannot take positive outcomes for granted. We must urgently improve international cooperation if we are to achieve the full social and economic potential of digital technology, while avoiding unintended consequences.

Given the high stakes involved, I established a High-level Panel on Digital Cooperation to help expand understanding of the key digital opportunities and challenges before us. The Panel brought together diverse experts and put forward a wide range of recommendations, including on how to better govern digital technology development through open, agile and multi-stakeholder models.

In that same spirit and in today's fast-changing environment, I welcome this timely *Digital Economy Report* of the United Nations Conference on Trade and Development, which examines the implications of the digital economy, especially for developing countries.

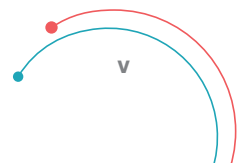
Digital advances have generated enormous wealth in record time, but that wealth has been concentrated around a small number of individuals, companies and countries. Under current policies and regulations, this trajectory is likely to continue, further contributing to rising inequality. We must work to close the digital divide, where more than half the world has limited or no access to the Internet. Inclusivity is essential to building a digital economy that delivers for all.

New technologies, especially artificial intelligence, will inevitably lead to a major shift in the labour market, including the disappearance of jobs in some sectors and the creation of opportunities in others, on a massive scale. The digital economy will require a range of new and different skills, a new generation of social protection policies, and a new relationship between work and leisure. We need a major investment in education, rooted not just in learning but in learning how to learn, and in providing lifelong access to learning opportunities for all.

The digital economy has also created new risks, from cybersecurity breaches to facilitating illegal economic activities and challenging concepts of privacy. Governments, civil society, academia, the scientific community and the technology industry must work together to find new solutions.

Not a day passes for me without seeing the many ways in which digital technology can advance peace, human rights and sustainable development for all. This report offers valuable insights and analyses, and I commend it to a wide global audience as we strive together to ensure that no one is left behind by the fast-evolving digital economy.

António Guterres  
Secretary-General  
United Nations



## Foreword

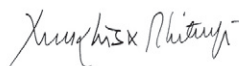
The rapid spread of digital technologies is transforming many economic and social activities. However, widening digital divides threaten to leave developing countries, and especially least developed countries, even further behind. A smart embrace of new technologies, enhanced partnerships and greater intellectual leadership are needed to redefine digital development strategies and the future contours of globalization.

This first edition of the *Digital Economy Report* – previously known as the Information Economy Report – examines the implications of the emerging digital economy for developing countries in terms of value creation and capture. It highlights the two main drivers of value creation in the digital era – digital data and platformization – and explores how current trends of wealth concentration could be replaced by trajectories leading to more equitable sharing of the gains from digitalization.

These are still early days in the digital era, and we have more questions than answers about how to deal with the digital challenge. Given the absence of relevant statistics and empirical evidence, as well as the rapid pace of technological change, decision-makers face a moving target as they try to adopt sound policies relating to the digital economy.

UNCTAD is committed to accompanying its member States with evidence for informed decision-making, as they consider different policy options and practices aimed at benefiting from the digital economy. Beyond our research on the digital economy, our Intergovernmental Group of Experts on E-Commerce and the Digital Economy and the annual eCommerce Week provide valuable forums for policy dialogue. We also offer technical assistance and capacity-building, and seek to make such support more transparent and easily accessible through the *eTrade for all* initiative and its 30 partner organizations.

It is my hope that this holistic approach will respond to the desire of people in developing countries to take part in the new digital world, not just as users and consumers, but also as producers, exporters and innovators, for creating and capturing more value on their path towards sustainable development.



Mukhisa Kituyi  
Secretary-General

United Nations Conference on Trade and Development



# Acknowledgements

The *Digital Economy Report 2019* was prepared under the overall guidance of Shamika N. Sirimanne, Director of the Division on Technology and Logistics, by a team comprising Torbjörn Fredriksson and Pilar Fajarnes Garces (team leaders), Scarlett Fondeur Gil, Christopher Jones, Martine Julsaint Kidane, Diana Korke and Thomas van Giffen.

The Report benefited from major substantive inputs provided by Christopher Foster, Nicolas Friederici, Parminder Jeet Singh, Michael Minges and Nick Srnicek. Additional inputs were contributed by Anna Abramova, Janine Berg, Ebru Gokce, Lukonga Lindunda, Christoph Spennemann, Astrit Sulstarova and Attiya Waris.

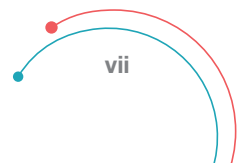
Valuable comments were received by experts attending a Brainstorming Meeting in May 2018 and a Peer Review Meeting in February 2019, both in Geneva. The experts included Jim Bennett, Carla Bonina, Suaihua Cheng, Jonathan Donner, Paul Donohoe, Helani Galpaya, Michael Kende, Isya Hanum Kresnadi, James Howe, Massimo Meloni, Thao Nguyen, Nnenna Nwakanma, David Souter, Giovanni Valentini, Desirée van Welsum and Anida Yupari. Further comments and inputs were received at various stages of production of the Report from Joerg Mayer and Holger Schmidt.

UNCTAD greatly appreciates additional inputs from the Economic Commission for Latin America and the Caribbean, the Economic and Social Commission for Asia and the Pacific, the Economic and Social Commission for Western Asia and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). In addition, Eurostat, the International Labour Organization and the International Telecommunication Union generously shared their data, which is also highly appreciated.

UNCTAD is grateful to national statistical offices for their sharing of data and for the responses of member States to UNCTAD's annual survey questionnaire on their ICT sectors and on ICT usage by enterprises.

The cover and other graphics were prepared by Magali Studer and desktop publishing was done by Magali Studer and Nathalie Lorient. Infographics were done by Natalia Stepanova and the *Digital Economy Report 2019* was edited by Praveen Bhalla.

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# OVERVIEW

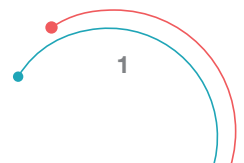
The *Digital Economy Report (DER)* (formerly known as the Information Economy Report) this year examines the scope for value creation and capture in the digital economy by developing countries. It gives special attention to opportunities for these countries to take advantage of the data-driven economy as producers and innovators – but also to the constraints they face – notably with regard to digital data and digital platforms.

This topic is timely, as only a decade remains for achieving the sustainable development goals (SDGs). Digital disruptions have already led to the creation of enormous wealth in record time, but this is highly concentrated in a small number of countries, companies and individuals. Meanwhile, digitalization has also given rise to fundamental challenges for policymakers in countries at all levels of development. Harnessing its potential for the many, and not just the few, requires creative thinking and policy experimentation. And it calls for greater global cooperation to avoid widening the income gap.

## The digital economy's expansion is driven by digital data...

The digital economy continues to evolve at breakneck speed, driven by the ability to collect, use and analyse massive amounts of machine-readable information (digital data) about practically everything. These digital data arise from the digital footprints of personal, social and business activities taking place on various digital platforms. Global Internet Protocol (IP) traffic, a proxy for data flows, grew from about 100 gigabytes (GB) per day in 1992 to more than 45,000 GB per second in 2017 (figure). And yet the world is only in the early days of the data-driven economy; by 2022 global IP traffic is projected to reach 150,700 GB per second, fuelled by more and more people coming online for the first time and by the expansion of the Internet of Things (IoT).

The development and policy implications of data collection and use depend greatly on the type of data involved: personal or non-personal; private or public; for commercial or government purposes; volunteered, observed or inferred; sensitive or non-sensitive. An entirely new “data value chain” has evolved, comprising firms that support data collection, the production of insights from data, data storage, analysis and modelling. Value creation arises once the data are transformed into digital intelligence and monetized through commercial use.



**Figure** Evolution of global Internet traffic, selected years  
(Gigabytes per second)

**2002**  
100 GB  
per second

**2007**  
2 000 GB  
per second

**2017**  
46 000 GB  
per second

**2022**  
150 700 GB  
per second

### ... and digital platforms

Platformization is the second driver. In the past decade, a plethora of digital platforms have emerged around the world using data-driven business models, and disrupting existing industries in their wake. The power of platforms is reflected in the fact that seven of the world's top eight companies by market capitalization use platform-based business models.

Digital platforms provide the mechanisms for bringing together a set of parties to interact online. A distinction can be made between transaction platforms and innovation platforms. *Transaction platforms* are two/multi-sided markets with an online infrastructure that supports exchanges between a number of different parties. They have become a core business model for major digital corporations (such as Amazon, Alibaba, Facebook and eBay), as well as for those that are supporting digitally enabled sectors (such as Uber, Didi Chuxing or Airbnb). *Innovation platforms* create environments for code and content producers to develop applications and software in the form of, for example, operating systems (e.g. Android or Linux) or technology standards (e.g. MPEG video).

Platform-centred businesses have a major advantage in the data-driven economy. As both intermediaries and infrastructures, they are positioned to record and extract all data related to online actions and interactions among users of the platform. The growth of digital platforms is directly linked to their capacity to collect and analyse digital data, but their interests and behaviour depend greatly on how they monetize those data to generate revenue.



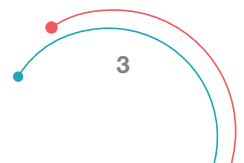
## Geographically, the development of the digital economy is highly uneven

Digital developments will have implications for virtually all the SDGs, and will affect all countries, sectors and stakeholders. At present, the world is characterized by a yawning gap between the under-connected and the hyper-digitalized countries. For example, in least developed countries (LDCs), only one in five people uses the Internet as compared with four out of five in developed countries. This is just one aspect of the digital divide. In other areas, such as capabilities for harnessing digital data and frontier technologies, the gap is considerably wider. For example, Africa and Latin America together account for less than 5 per cent of the world's colocation data centres. If left unaddressed, these divides will exacerbate existing income inequalities. It is therefore essential to consider how developing countries may be affected by this (r)evolution in terms of the creation and capture of value, and what should be done to improve the status quo.

The economic geography of the digital economy does not display a traditional North-South divide. It is consistently being led by one developed and one developing country: the United States and China. For example, these two countries account for 75 per cent of all patents related to blockchain technologies, 50 per cent of global spending on IoT, and more than 75 per cent of the world market for public cloud computing. And, perhaps most strikingly, they account for 90 per cent of the market capitalization value of the world's 70 largest digital platforms. Europe's share is 4 per cent and Africa and Latin America's together is only 1 per cent. Seven "super platforms" – Microsoft, followed by Apple, Amazon, Google, Facebook, Tencent, Alibaba – account for two thirds of the total market value. Thus, in many digital technological developments, the rest of the world, and especially Africa and Latin America, are trailing considerably far behind the United States and China. Some of the current trade frictions reflect the quest for global dominance in frontier technology areas.

## What is value in the digital economy?

The expansion of the digital economy creates many new economic opportunities. Digital data can be used for development purposes and for solving societal problems, including those related to the SDGs. It can thus help improve economic and social outcomes, and be a force for innovation and productivity growth. Platforms facilitate transactions and networking as well as information exchange. From a business perspective, the transformation of all sectors and markets through digitalization can foster the production of higher quality goods and services at reduced costs.



Furthermore, digitalization is transforming value chains in different ways, and opening up new channels for value addition and broader structural change.

But positive outcomes are far from automatic. Just because digitalization has the potential to support development, any value realized is unlikely to be equitably distributed. Even if individuals, firms and countries do not – or only partially – take part in the digital economy, they can still be adversely affected indirectly. Workers with limited digital skills will find themselves at a disadvantage vis-à-vis those who are better equipped for the digital economy, incumbent local firms will meet stiff competition from digitalized domestic and foreign ones, and various jobs will be lost to automation. The net impact will depend on the level of development and digital readiness of countries and their stakeholders. It will also depend on the policies adopted and implemented at national, regional and international levels.

Impacts on value creation and capture can be considered across several economic dimensions (e.g. productivity, value added, employment, income and trade), for different actors (workers, micro, small and medium-sized enterprises (MSMEs), platforms and governments), and for different components of the digital economy (core, narrow and broad in scope). A summary of potential impacts of the data-driven economy by type of actor and for different parts of the digital economy is presented in the table below.

### Measuring value in the digital economy is difficult

Measuring the digital economy and related value creation and capture is fraught with difficulties. Firstly, there is no widely accepted definition of the digital economy. Secondly, reliable statistics on its key components and dimensions, especially in developing countries, are lacking. Although several initiatives are under way to improve the situation, they remain insufficient, and are struggling to cope with the rapid pace of evolution of the digital economy.

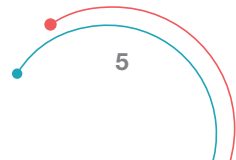
Depending on the definition, estimates of the size of the digital economy range from 4.5 to 15.5 per cent of world GDP. Regarding value added in the information and communications technology (ICT) sector, the United States and China together account for almost 40 per cent of the world total. As a share of GDP, however, the sector is the largest in Taiwan Province of China, Ireland and Malaysia. Global employment in the ICT sector increased from 34 million in 2010 to 39 million in 2015, with computer services accounting for the largest share (38 per cent). The share of the ICT sector in total employment rose over the same period, from 1.8 per cent to 2 per cent.



Table Potential impacts on value creation and capture from an expanding digital economy, by its components and actors

ACTORS

DIGITAL ECONOMY COMPONENT	Individuals (as users/ consumers and workers)	MSMEs	Multinational enterprises/ digital platforms	Governments	ECONOMY-WIDE IMPLICATIONS
<b>Core, digital sector</b>	<p>New jobs for building and installing ICT infrastructure.</p> <p>New jobs in telecom and ICT sector, especially ICT services.</p>	<p>Greater inclusion under suitable circumstances or spillovers/domestic linkages.</p> <p>Increased competition from cloud-service providers.</p>	<p>Investment opportunities for companies that meet high capital, technological and skills requirements.</p>	<p>Attracting investment.</p> <p>Tax revenues from the economic activity created.</p>	<p>Increased growth, productivity and value added.</p> <p>Employment creation.</p> <p>Investment and diffusion of technologies; R&amp;D likely located in high-income countries.</p> <p>Mixed trade impacts.</p>
<b>Digital economy</b>	<p>New jobs in digital services, especially for highly skilled people.</p> <p>New forms of digital work, including for the less skilled.</p>	<p>New opportunities in digital ecosystems.</p> <p>Increased competition from foreign digital firms.</p>	<p>Enhanced productivity from data-driven business models.</p> <p>Greater control of value chains using platform-based business models.</p> <p>New opportunities in the sharing economy.</p>	<p>More tax revenue resulting from increased economic activity and formalization of enterprises.</p> <p>Lost customs revenue from digitalization of products.</p>	<p>Higher growth, productivity and value added.</p> <p>Employment creation/ losses.</p> <p>Higher investment.</p> <p>Aggregation of digital firms in some locations.</p> <p>Mixed trade impacts.</p> <p>Market concentration.</p>
<b>Digitalized economy</b>	<p>New jobs in ICT occupations across industries.</p> <p>Need for new skills as higher-value roles are redesigned using digital tools.</p> <p>Greater efficiency of services received.</p> <p>Job losses or transformation due to digitalization.</p> <p>Risk of worsened working conditions.</p> <p>Improved connectivity.</p> <p>More choice, convenience, customization of products for users and consumers.</p> <p>Lower consumer prices.</p>	<p>Platform-enabled market access.</p> <p>Reduced transaction costs.</p> <p>Risk of "race to the bottom" in markets vs. ability to find a niche.</p> <p>Lost opportunities due to automation (e.g. logistics, business processes).</p> <p>New roles in service provision.</p> <p>New business opportunities for digitalized enterprises.</p>	<p>Emergence of platform firms with data-driven models.</p> <p>Gains from efficiency, productivity and quality.</p> <p>Opportunities for the monetization of data.</p> <p>Increased competitive advantage of digital platforms</p> <p>Increased market power and control of data value chain.</p> <p>Leading digitalization in different sectors.</p>	<p>Increased efficiency of services through e-government.</p> <p>Increased revenue from customs automation.</p> <p>Unclear impact on tax revenue: increases from higher economic activity; losses from tax optimization practices by digital platforms and MNEs.</p> <p>Data-driven opportunities to meet various SDGs.</p>	<p>Growth through improved efficiency in sectors and value chains.</p> <p>Productivity improvements.</p> <p>Innovation impacts.</p> <p>Potential crowding out of local firms in digitally disrupted sectors</p> <p>Potential automation in low and medium-skill jobs.</p> <p>Wider inequality.</p> <p>Mixed trade impacts.</p> <p>Impacts on structural change.</p>



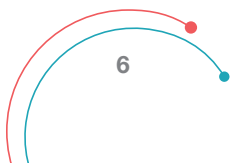
Within the ICT sector, computer services are the largest component, with a 40 per cent share of total value added. The global computer services industry is dominated by the United States; its share of that industry's value added is almost as big as that of the combined total of the next nine largest economies. India has the largest share among developing countries in this context. Computer services, which is the only subsector that is growing across all regions, is one of the main drivers of employment in the sector. Value added in ICT manufacturing is highly concentrated in East Asia (led by China), and the scope for more developing countries to extract value from this sector is likely to be limited.

In the past decade, global exports of ICT services and services that can be delivered digitally grew considerably faster than overall services exports, reflecting the increasing digitalization of the world economy. In 2018, digitally deliverable service exports amounted to \$2.9 trillion, or 50 per cent of global services exports. In LDCs, such services accounted for an estimated 16 per cent of total services exports, and they more than tripled from 2005 to 2018.

### The growing power of digital platforms has global implications

Digital platforms are increasingly important in the world economy. The combined value of the platform companies with a market capitalization of more than \$100 million was estimated at more than \$7 trillion in 2017 – 67 per cent higher than in 2015. Some global digital platforms have achieved very strong market positions in certain areas. For example, Google has some 90 per cent of the market for Internet searches. Facebook accounts for two thirds of the global social media market, and is the top social media platform in more than 90 per cent of the world's economies. Amazon boasts an almost 40 per cent share of the world's online retail activity, and its Amazon Web Services accounts for a similar share of the global cloud infrastructure services market. In China, WeChat (owned by Tencent) has more than one billion active users and, together with Alipay (Alibaba), its payment solution has captured virtually the entire Chinese market for mobile payments. Meanwhile, Alibaba has been estimated to have close to 60 per cent of the Chinese e-commerce market.

Several factors help explain the rapid rise to dominance of these digital giants. The first is related to network effects (i.e. the more users on a platform, the more valuable it becomes for everyone). The second is the platforms' ability to extract, control and analyse data. As with network effects, more users mean more data, and more data mean a stronger ability to outcompete potential rivals and capitalize on first-mover advantages. Thirdly, once a platform begins to gain traction and starts offering different





integrated services, the costs to users of switching to an alternative service provider start to increase.

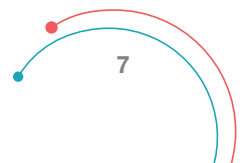
Global digital platforms have taken steps to consolidate their competitive positions, including by acquiring potential competitors and expanding into complementary products or services. Major acquisitions by digital platform companies include Microsoft's takeover of LinkedIn and Facebook's acquisition of WhatsApp. Alphabet (Google) and Microsoft have invested in telecommunications equipment by acquiring Motorola and Nokia, respectively. Major platforms have also made other large acquisitions in the retail industry, advertising and marketing industry, and in non-residential real estate.

Other steps include investing strategically in research and development (R&D) and lobbying in domestic and international policy-making circles. At the same time, strategic partnering between multinational enterprises (MNEs) in traditional sectors and global digital platform corporations is also being explored. For example, Walmart has partnered with Google to use Google Assistant; Ford and Daimler have joined Baidu in its Apollo platform; Google has built the Android Automotive platform with Volvo and Audi; GE has partnered with Microsoft to use its Azure cloud services; and Intel and Facebook are collaborating on the development of a new artificial intelligence (AI) chip.

### Turning data into digital intelligence is the key to success

Data have become a new economic resource for creating and capturing value. Control over data is strategically important to be able to transform them into digital intelligence. In virtually every value chain, the ability to collect, store, analyse and transform data brings added power and competitive advantages. Digital data are core to all fast-emerging digital technologies, such as data analytics, AI, blockchain, IoT, cloud computing and all Internet-based services. Unsurprisingly, data-centric business models are being adopted not only by digital platforms, but also, increasingly, by lead companies across various sectors.

Local firms in developing countries can benefit from being able to use services offered by global platforms. In some cases, local knowledge (for instance, of search habits, traffic conditions and cultural nuances) may also give an advantage to locally rooted digital platforms, enabling them to offer services tailored to local users. Yet, due to the competition dynamics outlined above, developing-country platforms that are trying to scale typically face an uphill battle. The dominance of global digital platforms, their control of data, as well as their capacity to create and capture the ensuing value, tend





to further accentuate concentration and consolidation rather than reduce inequalities between and within countries.

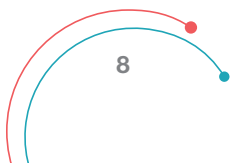
Indeed, in the global “data value chain”, many countries may find themselves in subordinate positions, with value and data being concentrated in a few global platforms and other lead MNEs. Countries at all levels of development risk becoming mere providers of raw data to those digital platforms while having to pay for the digital intelligence produced with those data by the platform owners. Breaking this vicious circle will require out-of-the-box thinking aimed at finding an alternative configuration of the digital economy that leads to more balanced results and a fairer distribution of the gains from data and digital intelligence.

### **Policies are needed to make the digital economy work for the many, not just the few**

Technology is not deterministic. It creates both opportunities and challenges. It is up to governments, in close dialogue with other stakeholders, to shape the digital economy by defining the rules of the game. This in turn requires a reasonable sense of the kind of digital future that is desirable. Policymakers need to make choices that can help reverse current trends towards widening inequalities and power imbalances wrought by the digital economy. This is a huge challenge that will involve the adaptation of existing policies, laws and regulations, and/or the adoption of new ones in many areas. For most countries, the digital economy and its long-term repercussions remain uncharted territory, and policies and regulations have not kept up with the rapid digital transformations taking place in economies and societies. Even in developed countries, few approaches have been tried and tested.

The evolution of the digital economy calls for unconventional economic thinking and policy analysis. Policy responses need to take into account the blurring of the boundaries between sectors due to servitization, as well as the increased difficulties of enforcing national laws and regulations with respect to cross-border trade in digital services and products. They should also explore new pathways for local value creation and capture, and further structural transformation through digitalization.

While some issues can be addressed through national policies and strategies, the global nature of the digital economy will require more dialogue, consensus-building and policy-making at the international level. At this stage there are many more questions than definitive answers about how to deal with the digital economy. Given the paucity of relevant statistics and empirical evidence, as well as the rapid pace of technological change, findings and policy responses will need to be constantly reassessed.





## Enhancing readiness to create and capture value

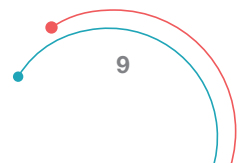
National policies play a vital role in preparing countries for value creation and capture in the digital era. In view of the cross-sectoral nature of digitalization, a whole-of-government response is important to the formulation and implementation of policies aimed at securing benefits and dealing with challenges. Ensuring affordable and reliable connectivity, which is essential for creating and capturing value in the digital economy, remains a major challenge in many LDCs, especially in rural and remote areas, and requires attention. UNCTAD's Rapid eTrade Readiness Assessments can serve as a useful starting point for LDCs and other countries by identifying areas for improvement and policy interventions that could help alleviate bottlenecks.

Boosting entrepreneurship in digital and digitally enabled sectors is key to local value creation. In many developing countries, digital entrepreneurs face various barriers to scaling their activities. Global digital competitors already occupy the most scalable digital product categories. Servicing local markets digitally often requires the setting up of blended digital-analog processes, which are less "physical-asset-light" than the strategies used by digital platforms in more advanced economies.

In most developing countries, market opportunities may lie especially in local and/or regional digital goods and services markets. Policy can seek to incentivize different clusters within a region to develop complementary and deep technical knowledge bases. The greatest potential may lie in digital products that are hard to be replicated elsewhere, that are needed locally, and that can be transported or duplicated in a certain location at relatively low cost. Governments could focus less on hackathons and bootcamps or high-profile projects (such as technology parks), and more on fostering tacit entrepreneurial knowledge creation through mentorship programmes, vocational training, apprenticeships and internships.

They should also consider ways of empowering women entrepreneurs in this area. Mentoring, networking and exposing them to role models can help overcome inherent gender biases or cultural norms that may limit women's ability to confidently start or sustain projects in e-commerce and data-driven technology areas.

Securing value from the digital economy requires not just a stronger digital sector, but also broader efforts to enable enterprises in all sectors to take advantage of digital technologies. In many LDCs, for example, this concerns, in particular, agriculture and tourism. Firms that invest in ICTs are generally more productive, competitive and profitable. However, many small business owners in developing countries, and especially in LDCs, lack the capabilities, skills and awareness to leverage digital connectivity



for their business operations. One way to address this is to integrate ICT skills development into general business-management training curricula. Governments should also consider collaborating with the private sector to provide more training to MSMEs on how to leverage digital platforms.

## Policies for harnessing digital data

Countries with limited capabilities to turn digital data into digital intelligence and business opportunities are at a clear disadvantage when it comes to value creation. To prevent increased dependence in the data-driven global economy, national development strategies should seek to promote digital upgrading (value addition) in data value chains, and to enhance domestic capacities to “refine” the data. This may require national policies to better seize opportunities and deal with the risks and challenges associated with the expansion of digital data. Key policy questions include how to assign ownership and control over data; how to build consumer trust and protect data privacy, how to regulate cross-border data flows, and how to build relevant skills and capabilities for harnessing digital data for development.

Various proposals have been made to ensure a more equitable sharing of the economic gains from digital data. Some focus on remunerating the individuals who are sharing the data with platforms through personal data markets or via data trusts. Others call for the use of collective data ownership and of digital data funds as a basis for a new “digital data commons”. It will be necessary to experiment with these and other options, and assess their feasibility and respective pros and cons.

Data privacy and data security require special attention. Various security arrangements are important to protect against deliberate acts of data misuse. Laws and regulations are needed to counter theft of personal data, to set rules for what and how personal data can be collected, used, transferred or removed, and to ensure that data-driven business models generate gains for society as a whole. The European Union’s General Data Protection Regulation, which took effect in May 2018, is currently the most comprehensive approach to data protection, with global implications.

## The digital era requires updating of competition and taxation policies

Given the network effects and the tendency towards market concentration in the digital economy, competition policy will have to play a more important role in the context of creating and capturing value. Existing frameworks need to be adapted to provide for competitive and contestable markets in the digital era. The current dominant approach in antitrust regulations



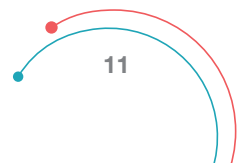
is based on measuring harm to consumers in the form of higher prices. It should be broadened to consider, for example, consumer privacy, personal data protection, consumer choice, market structure, switching costs and lock-in effects. In addition, an appropriate competition policy should be put in place and enforced within regional or global frameworks.

There are different ways for enforcement of competition law to be made more effective vis-à-vis dominant digital players, for example by carefully defining the relevant market, assessing possible abuse of market power and updating the tools for merger reviews. To the extent that services provided could be compared with utilities, regulation should be considered as a tool for ensuring open and fair access for all businesses. Whichever option is chosen, developing countries need to strengthen their capacity to enforce their competition policies. Efforts at the regional and global levels may be more effective in dealing with abusive practices and merger reviews, and for ensuring that dominant platforms are open to local and regional companies under fair terms and conditions.

Taxation is another key concern for value capture. Countries are rethinking how taxation rights should be allocated to prevent possibilities for under-taxation of major digital platforms in the fast-evolving digital economy. Observers have noted a mismatch between where profits are currently taxed, and where and how value is created. As developing countries are mainly markets for global digital platforms, and their users contribute significantly to the generation of value and profits, authorities in these countries should have the right to tax such platforms. Under the auspices of the OECD, different options are being reviewed with the goal of reaching consensus on a solution by the end of 2020. As the tax landscape evolves in the coming years, it is essential to ensure wide and more inclusive participation of developing countries in international discussions on taxation of the digital economy, including strengthening the United Nations Committee of Experts on International Cooperation in Tax Matters.

### **Acknowledge the need for speed, flexibility and international support**

If left unaddressed, the yawning gap between the under-connected and the hyper-digitalized countries will widen further and existing inequalities will be exacerbated. Digital divides, differences in readiness and the high concentration of market power in the digital economy all point to the need for new policies and regulations that will help create a fairer distribution of gains from the ongoing process of digital transformation. This will not be easy.



Digitalization affects different countries in different ways, and individual governments require policy space to regulate the digital economy in order to fulfil various legitimate public policy objectives. The handling and regulation of digital data are complex, as they touch upon human rights, trade, economic value creation and capture, law enforcement and national security. Formulating policies that take these various dimensions into account is hard, but nonetheless necessary. Furthermore, ensuring an effective distribution of gains, as well as coping with digital disruptions, will require more social protection measures and efforts to reskill workers.

Meanwhile, several policy challenges may be more effectively addressed at the regional or international level. This applies, for example, to data protection and security, cross-border data flows, competition, taxation and trade. Finding adequate solutions requires greater international collaboration and policy dialogue, with the full involvement of developing countries. Any consensus will need to incorporate significant flexibilities to enable all countries to participate.

Given the complexity and novelty of the issues at stake, and the continuously rapid pace of technological change, policy experimentation will be necessary to assess the benefits and disadvantages of different options. The use of regulatory sandboxes could be a first step before moving to fully national, regional or global solutions.

The development community will need to explore more comprehensive ways to support countries that are trailing in the digital economy. For ensuring that digital transformation contributes to more inclusive outcomes, national efforts in developing countries should be complemented by more international support. Development partners urgently need to integrate the digital dimension into their aid policies and strategies. Assistance should aim at reducing the digital divides, strengthening the enabling environment for value creation, building capacities in the private and public sectors, and enhancing trust by supporting the adoption and enforcement of relevant laws and regulations to promote value creation and capture in the data-driven digital economy.

